

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: October 21, 2001, 23:16:59 ; Search time 51.66 Seconds  
(without alignments)  
1928.092 Million cell updates/sec

Title: US-09-515-806-2  
Perfect score: 8511  
Sequence: 1 MAGRGAPGRDRPPESYP.....YNIKVEKYSVLFYSYRDD 1643

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 412676 seqs, 60623988 residues  
Total number of hits satisfying chosen parameters: 412676

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000  
Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : A\_Geneseq\_0601.\*  
1: /SIDSI/gcgdata/geneseq/geneseq/AA1980.DAT.\*  
2: /SIDSI/gcgdata/geneseq/geneseq/AA1981.DAT.\*  
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4: /SIDSI/gcgdata/geneseq/geneseq/AA1983.DAT.\*  
5: /SIDSI/gcgdata/geneseq/geneseq/AA1984.DAT.\*  
6: /SIDSI/gcgdata/geneseq/geneseq/AA1985.DAT.\*  
7: /SIDSI/gcgdata/geneseq/geneseq/AA1986.DAT.\*  
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9: /SIDSI/gcgdata/geneseq/geneseq/AA1988.DAT.\*  
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15: /SIDSI/gcgdata/geneseq/geneseq/AA1994.DAT.\*  
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19: /SIDSI/gcgdata/geneseq/geneseq/AA1998.DAT.\*  
20: /SIDSI/gcgdata/geneseq/geneseq/AA1999.DAT.\*  
21: /SIDSI/gcgdata/geneseq/geneseq/AA2000.DAT.\*  
22: /SIDSI/gcgdata/geneseq/geneseq/AA2001.DAT.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description        |
|------------|-------|-------------|--------|----|--------------------|
| 1          | 8511  | 100.0       | 1649   | 22 | Novel protein kina |
| 2          | 2996  | 35.2        | 604    | 21 | Human cancer asoc  |
| 3          | 2946  | 34.6        | 619    | 21 | Human ORFX ORF2525 |
| 4          | 623   | 7.3         | 135    | 21 | Human ORFX ORF2786 |
| 5          | 549.5 | 6.5         | 1108   | 20 | Pancreatic eukaryo |
| 6          | 511.5 | 6.0         | 1068   | 20 | Pancreatic eukaryo |
| 7          | 511.5 | 6.0         | 1115   | 20 | Rabbit eIF-2 alpha |
| 8          | 473.5 | 5.6         | 626    | 14 | Haem-regulated euk |
| 9          | 473.5 | 5.6         | 626    | 15 | Novel protein kina |
| 10         | 471.5 | 5.5         | 630    | 22 | Human PKR protein. |
| 11         | 415.5 | 4.9         | 550    | 18 |                    |

|    |       |     |      |    |          |
|----|-------|-----|------|----|----------|
| 12 | 414   | 4.9 | 551  | 16 | AA882663 |
| 13 | 413   | 4.9 | 551  | 18 | AAW12705 |
| 14 | 399   | 4.7 | 509  | 18 | AAW25223 |
| 15 | 375   | 4.4 | 495  | 21 | AAW94280 |
| 16 | 356   | 4.2 | 526  | 18 | AAW25222 |
| 17 | 342.5 | 4.0 | 371  | 20 | AAW21854 |
| 18 | 326.5 | 3.8 | 508  | 18 | AAW25224 |
| 19 | 317.5 | 3.7 | 651  | 21 | AAW77941 |
| 20 | 317.5 | 3.7 | 651  | 21 | AAW70100 |
| 21 | 312.5 | 3.7 | 772  | 21 | AAW85175 |
| 22 | 312   | 3.7 | 690  | 14 | AAW40974 |
| 23 | 312   | 3.7 | 690  | 21 | AAW70101 |
| 24 | 308.5 | 3.6 | 705  | 21 | AAW85169 |
| 25 | 305   | 3.6 | 661  | 21 | AAW70098 |
| 26 | 304.5 | 3.6 | 711  | 21 | AAW85170 |
| 27 | 300   | 3.5 | 642  | 21 | AAW70099 |
| 28 | 297   | 3.5 | 733  | 20 | AAW30937 |
| 29 | 297   | 3.5 | 733  | 20 | AAW22202 |
| 30 | 286.5 | 3.4 | 745  | 22 | AAW65611 |
| 31 | 285   | 3.3 | 1230 | 19 | AAW48895 |
| 32 | 284.5 | 3.3 | 442  | 19 | AAW98707 |
| 33 | 282.5 | 3.3 | 740  | 21 | AAW85172 |
| 34 | 278.5 | 3.3 | 802  | 21 | AAW68790 |
| 35 | 276.5 | 3.2 | 802  | 21 | AAW85168 |
| 36 | 275.5 | 3.2 | 403  | 21 | AAW96770 |
| 37 | 275.5 | 3.2 | 525  | 21 | AAW96776 |
| 38 | 274   | 3.2 | 626  | 19 | AAW56159 |
| 39 | 274   | 3.2 | 626  | 20 | AAW43320 |
| 40 | 274   | 3.2 | 626  | 20 | AAW42109 |
| 41 | 274   | 3.2 | 626  | 20 | AAW73533 |
| 42 | 274   | 3.2 | 626  | 21 | AAW01218 |
| 43 | 274   | 3.2 | 842  | 20 | AAW55956 |
| 44 | 273   | 3.2 | 336  | 21 | AAW59148 |
| 45 | 273   | 3.2 | 445  | 21 | AAW92330 |

ALIGNMENTS

RESULT 1  
ID AAB65663  
ID AAB65663 standard; Protein; 1649 AA.  
AC AAB65663;  
XX  
XX  
DT 27-MAR-2001 (first entry)  
XX  
DE Novel protein kinase, SEQ ID NO: 191.  
XX  
XX  
KW Human; mouse; protein kinase; antiarthritic; antisclerotic; osteopathic;  
KW immunosuppressive; cardiant; renal; antiinflammatory; antiasthmatic;  
KW dermatological; antidiabetic; antifertility; gene therapy; vaccine;  
KW immune disorder; cardiovascular disease; neurodegenerative disease;  
KW cancer; autoimmune disorder; stroke; inflammatory bowel disease;  
KW inflammatory pelvic disease; multiple sclerosis; psoriasis.  
XX  
OS Homo sapiens.  
XX  
XX  
PN WO200073469-A2.  
XX  
XX  
PD 07-DEC-2000.  
XX  
XX  
PF 26-MAY-2000; 2000WO-US14842.  
XX  
XX  
PR 28-MAY-1999; 99US-0136503.  
XX  
XX  
PA (SUGE-) SUGEN INC.  
XX  
XX  
PI Plowman GD, Martinez R, Whyte D, Sudersanam S;  
XX  
XX  
DR WPI; 2001-032161/04.  
DR N-PSDB; AAF44691.  
XX

Potential  
interference

Nucleic acids encoding kinase polypeptides, useful for diagnosing and treating immune-related diseases and disorders, cardiovascular disease, neurodegenerative diseases and/or cancers -

Claim 10; Fig 1; 310pp; English.

The present sequence is a novel protein kinase. The novel protein kinases and the nucleic acids that encode them may be used in the treatment and diagnosis of diseases associated with inappropriate kinase expression such as immune-related diseases and disorders, cardiovascular disease, neurodegenerative diseases and/or cancers. The nucleic acids and complementary sequences may also be used as DNA probes in diagnostic assays. The kinase polypeptides may be used as antigens in the production of antibodies of kinase expression and activity. Anti-kinase antibodies and kinase antagonists may also be used to down regulate kinase expression and activity. Diseases related to kinase expression and activity include rheumatoid arthritis, atherosclerosis, autoimmune disorders, complications of organ transplantation, myocardial infarction, immune disorders, cardiomyopathies, strokes, renal failure, oxidative-stress related disorders, chronic inflammatory bowel disease, chronic inflammatory pelvic disease, multiple sclerosis, asthma, osteoarthritis, psoriasis, rhinitis, autoimmunity, diabetes, cancers and reproductive disorders.

Sequence 1649 AA;

Query Match 100.0%; Score 8511; DB 22; Length 1649;  
Best Local Similarity 100.0%; Pred. No. 0;  
Matches 1643; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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QY 1 MAGRGAGRGGRDPPESYPQORDEHQLQALEAAYGADFDQDLRPDACCQVKEPPEINLVLY 60
DB 1 magrgagrggrdppesypqorqdelhqlaleaaygaadfdqdlrpdcacpvkpppeinlvly 60
QY 61 PGLTGEVYVYKDLRVKCPPTYDVVPEITELKNAKLSNESVNLKSRLEELAKKHGCE 120
DB 61 pgltgeevyvkdlrvkcpptydvvpelitelknaaklsnesvnlksrleelakkhgce 120
QY 121 VMIFELAYHVQSFLEHNNKPPKSFHEMLERRAQEQORLEAKKEEQEORLEHIO 180
DB 121 vmifealayhvdsflehnnkppksfheemlerraeqqorlleakrkeeqeoreilleio 180
QY 181 RRKEIEKEKRKEMAKOERLEIASLSNODHTSKDPGGHRTAAILHGGSPDFVGNKHR 240
DB 181 rrkeiekekrkemakorerleiaslsnqdhstkdpgghrtailhggspdfvgnghkr 240
QY 241 ANSSGRSRRQYVVCNSEDSPGCEILYFNMGSPDQLMVHKGCIGSDQGLKLVYNAL 300
DB 241 anssgrsrerqysvcnsedspgscelilyfmgspdgqlmvhkgcigsdeqlgklvynal 300
QY 301 EPATGCFVLLYEWLQWOKKMGPFITSQEKEKIDCKKOIGTETEFNSLVKLSHPNVVR 360
DB 301 ecatgcfvlllyewlqwkmgpfltsqekekidckkqiggtetefnslvklshpnnvr 360
QY 361 YLAMNKLKQDDSIYVDILVEHISVSLAHLSHSGPIPVHQLRRTYTAQLLSGLDYLSNS 420
DB 361 ylamnklqddsiyvdilvehisvslaahlsghgppvphqlrrtytaqlslgldylshns 420
QY 421 VVHKVLSASNVLDAGTVKTDYISIKRLADICKEDVFETRVRFSNAPLYKTGKKGD 480
DB 421 vvkhvlsasnlvdaegtvtktdyisikrladickedvfetrvrfsdnalpyktgkkgd 480
QY 481 VWRLGILLLSLSOGCEGYPVYTPSDLPADQDFLKKVCCLDDKERSPOQLLKHSPFIN 540
DB 481 vwrlgillllslsogcegyvpytspdlpadqdfllkvcclddkerspoqllkhspfin 540
QY 541 PQPKMPLVEQSPEDSGGDYVETVTPSNRLPSAFTSQRFQSFYTFEPEELQLLKGA 600
DB 541 pqpkmplveqspedsggdyyetvtpsnrlpsaafstqrfqsfyfiefpeelqlkgka 600
QY 601 FGAVTKVQNKLDGCCYAVKVRIPINPASQFRRIKEGVTLLSLRHENIVRYINAWIERHE 660
DB 601 fgavtkvqnkldgccyavkvrripinpasqfrrikgevtllsrhlenivryynawierhe 660
```

RESULT 2  
AAB43581

ID XX AAB43581 standard; Protein; 604 AA.  
 AC AAB43581;  
 DT 08-FEB-2001 (first entry)  
 XX Human cancer associated protein sequence SEQ ID NO:1026.  
 DE  
 XX Human; cancer associated gene; cancer antigen; detection; cancer;  
 KW diagnosis; cytostatic; proliferative; vulnary; immunomodulator;  
 KW antidiabetic; antiasthmatic; antirheumatic; antiarthritic; antiviral;  
 KW antiinflammatory; antihistoid; antiallergic; antibacterial; cardiant;  
 KW dermatological; neuroprotective; thrombolytic; coagulant; nootropic;  
 KW vasotropic; antipsoriatic; antiangiogenic; gene therapy; inflammation;  
 KW immune disorder; haematopoietic cell disorder; autoimmune disorder;  
 KW allergic reaction; graft versus host disease; organ rejection;  
 KW haemostatic; thrombolytic; cardiovascular disorder; infection;  
 KW neurological disease; drug screening.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO200055350-A1.  
 XX  
 XX 21-SEP-2000.  
 XX  
 PF 08-MAR-2000; 2000WO-US05882.  
 XX  
 XX 12-MAR-1999; 99US-0124270.  
 XX  
 XX (HUMA-) HUMAN GENOME SCI INC.  
 XX  
 PI Rosen CA, Ruben SM;  
 XX  
 DR WPI; 2000-587533/55.  
 DR N-PSDB; AAC77790.  
 XX  
 PT Novel isolated nucleic acids comprising sequences encoding peptides  
 PT useful for treating or diagnosing e.g. cancer -  
 XX  
 PS Claim 11; Page 1609-1611; 2352pp; English.  
 XX  
 CC AAC77607 to AAC78448 encode the human cancer associated proteins given  
 CC in AAB43398 to AAB4239. The proteins can have activities based on the  
 CC tissues and cells the genes are expressed in. Example of activities  
 CC include: cytostatic; proliferative; vulnary; immunomodulator;  
 CC antidiabetic; antiasthmatic; antirheumatic; antiarthritic;  
 CC antiinflammatory; antihistoid; antiallergic; antibacterial; antiviral;  
 CC dermatological; neuroprotective; cardiant; thrombolytic; coagulant;  
 CC nootropic; vasotropic; antipsoriatic and antiangiogenic. The  
 CC polynucleotides and polypeptides can be used for preventing, treating or  
 CC ameliorating medical conditions and diagnosing pathological conditions.  
 CC Polynucleotides, polypeptides, antibodies, agonists and antagonists from  
 CC the present invention may be used to treat immune disorders by activating  
 CC or inhibiting the proliferation, differentiation or mobilisation of  
 CC immune cells to treat disorders of haematopoietic cells, autoimmune  
 CC disorders, allergic reactions, graft versus host disease and organ  
 CC rejection, modulate haemostatic or thrombolytic activity, modulate  
 CC inflammation, cancers, cardiovascular disorders, neurological disease and  
 CC bacterial or viral infections. The peptides, nucleotides, antibodies,  
 CC agonists and antagonists may be also be used in drug screens. AAC78449 to  
 CC AAC78457 and AAB44240 represent sequences used in the exemplification of  
 CC the present invention.  
 XX  
 SQ Sequence 604 AA;  
 Query Match 35.2%; Score 2996; DB 21; Length 604;  
 Best Local Similarity 99.7%; Pred. No. 2e-239;  
 Matches 593; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
 Qy 1049 SDILKGNFSIRTAQMCHVCTIIRIFKRGAVOLCTPLLPNRQIYHNEAALFMDHS 1108  
 Db 4 sdilkgnsirtakmqhvcctiirifkrhgavqlctpllpnrqiyhneaalmdhs 63

Qy 1109 GMLVMLPDLRIPFARYVARNNIILNKRYCIERVFRPKLDRPHPKLLECAFDIVTSTT 1168  
 Db 64 gmlvmlpdlrpfaryvarnnilnlkrycivfrprkldrfphpkellecafdivstt 123  
 Qy 1169 NSFLPTAEIIVTIEIIQEPALQERNYSIYLNHTMLLKAILLHCGIPEDKLSOVYIILY 1228  
 Db 124 nsflptaeiivtielqepalqernysiylnhtmlkailhcgipedklsqvily 183  
 Qy 1229 DAVTEKTRREVEAKFNLSSNSLCLYKFIQKGLDQLDMLPTINSLIKQKTGIAQLV 1288  
 Db 184 davektrrreveakfncslssnslclrykfiqkgldqlmptlnslkqktgiaqlv 243  
 Qy 1289 KYGLKDLAEVVGKLGKIKLOVLINLGLYKVOQHNGIIFQFVAFIKRRQRAVPEILAA 1348  
 Db 244 kyglkdlaevvglkiklqvlinlglvykvqghngiifqfvafikrrgravpeilax 303  
 Qy 1349 GGRYDLLIPQRPQALGPVPTAIGVSIADKISAAVLNMEESVTISSCDLLVVSVGQMS 1408  
 Db 304 ggydllipqfrpqaigvsiadkisaavlmeesvtisscdllvsvsgqms 363  
 Qy 1409 MSRAINLTQKLWTAGITAEIMYDWSQSEQLQECYRHHETIYVALVSDKEGSHVKVSFE 1468  
 Db 364 msrainltqklwtagitaelmydwsqseelqeycrhheityvalvysdkegshvkvsfe 423  
 Qy 1469 KEROTEKRVLETELVDHVLQKLRKVTDERNGREASDNLAVQNLKGSFNASGLFEHGA 1528  
 Db 424 kerqtekrvlelvdhvlqklrtkvtderngreasnlaqlkgsfnsasglfeihga 483  
 Qy 1529 TVVPISVLAPEKLSASTRRRYETQVOTRLQTSILANLHOKSSEITLAVDLPKETILQFL 1588  
 Db 484 tvvpivslapeklsastrrryetqvtqltslanlhoksseielavdlpkeltilqfl 543  
 Qy 1589 SLEWDADEQAFNTTVKOLLRLPKQRYLKVCDIEIYNIKVEKVSFLFYSYRDD 1643  
 Db 544 slewdadeqafnttvkllsrlpkqrylklvcdieiylnkvekkvsvflfysyrd 598  
 RESULT 3  
 AAB42761  
 ID AAB42761 standard; Protein; 619 AA.  
 XX  
 AC AAB42761;  
 XX  
 DT 08-FEB-2001 (first entry)  
 DE Human ORFX ORF525 polypeptide sequence SEQ ID NO:5050.  
 XX  
 KW Human; open reading frame; ORFX; detection; cytostatic; hepatotropic;  
 KW vulnary; antipsoriatic; antiparkinsonian; nootropic; neuroprotective;  
 KW anticonvulsant; osteopathic; antiarthritic; immunosuppressant; cardiant;  
 KW immunostimulant; thrombolytic; coagulant; vasotropic; antidiabetic;  
 KW hypotensive; dermatological; immunosuppressive; antiinflammatory;  
 KW antiviral; antibacterial; antifungal; antirheumatic; antithyroid;  
 KW antianemic; gene therapy; cancer; proliferative disorder; hypertension;  
 KW neurodegenerative disorder; osteoarthritis; graft vs host disease;  
 KW cardiovascular disease; diabetes mellitus; hypothyroidism; SCID; AIDS;  
 KW severe combined immunodeficiency; systemic lupus erythematosus; infection;  
 KW allergy; aplastic anaemia; nocturnal haemoglobinuria; burn; wound;  
 KW bone damage; cartilage damage; antiinflammatory disease; coagulation;  
 KW thrombosis; contraceptive.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO200058473-A2.  
 XX  
 PD 05-OCT-2000.  
 XX  
 PF 31-MAR-2000; 2000WO-US08621.  
 XX  
 XX 31-MAR-1999; 99US-0127607.  
 PR 02-APR-1999; 99US-0127636.



CC immunostimulant; cardiant; thrombolytic; coagulant; vasotropic;  
 CC antidiabetic; hypotensive; dermatological; immunosuppressive;  
 CC antiinflammatory; antibacterial; antiviral; antifungal; antirheumatic;  
 CC antithyroid; and antianemic. The sequences can be used for determining  
 CC the presence of or predisposition to, or preventing or treating  
 CC pathological conditions associated with an ORFX-associated disorder. The  
 CC nucleic acids can be used to express ORFX proteins in gene therapy  
 CC vectors. The proteins and nucleic acids may be used to treat cancers,  
 CC proliferative disorders, neurodegenerative disorders, osteoarthritis,  
 CC graft vs host disease, cardiovascular disease, diabetes mellitus,  
 CC hypertension, hypothyroidism, cholesterol ester storage, systemic lupus  
 CC erythematosus, severe combined immunodeficiency (SCID), AIDS, viral,  
 CC bacterial or fungal infection, malaria, autoimmune disorders, asthma,  
 CC allergic, aplastic anaemia, burns, wounds, bone and cartilage damage,  
 CC nocturnal haemoglobinuria, antiinflammatory disease; to enhance  
 CC coagulation; to inhibit thrombosis; and as a contraceptive.  
 XX  
 SQ Sequence 135 AA;

Query Match 7.3%; Score 623; DB 21; Length 135;  
 Best Local Similarity 97.5%; Pred. No. 1e-43;  
 Matches 119; Conservative 2; Mismatches 1; Indels 0; Gaps 0;  
 QY 921 NOKVDFSLGIIFEMSYHPMWTASERIFVLNQLRDTSPKPEDDDDGEHAKOKSVISW 980  
 DB 1 nqkvdflslgiifemshpmtaserifvlnqlrdtpskpfedddgehakoksviw 60  
 QY 981 LNLHDPKAPRPTATELLKSELLPPPMSESLHEVLHHTLTVNDGKAYTMAQIFSORIS 1040  
 DB 61 lnhdpakrptatellksellpppmseeslhevhlhhtltnvndgkayrtmmaqifsgsla 120  
 QY 1041 PA 1042  
 DB 121 ga 122

RESULT 5  
 AAY30046  
 ID AAY30046 standard; Protein; 1108 AA.  
 AC AAY30046;  
 DT 04-OCT-1999 (first entry)  
 DE Pancreatic eukaryotic translation initiation factor-2 alpha kinase.  
 KW Pancreatic eukaryotic translation initiation factor-2 alpha kinase; PEK;  
 KW eukaryotic translation initiation factor-2 alpha; pancreatic islet;  
 KW drug discovery; drug development.  
 OS Rattus sp.  
 FH Key  
 FT Modified-site 20 Location/Qualifiers  
 FT /note= "consensus N-myristylation site"  
 FT 44  
 FT /note= "consensus N-myristylation site"  
 FT 517..532  
 FT Region  
 FT /note= "hydrophobic region; potential transmembrane  
 region"  
 FN W09938994-A1.  
 PD 05-AUG-1999.  
 PF 12-JAN-1999; 99WO-US00623.  
 PF 25-NOV-1998; 98US-0109992.  
 PR 29-JAN-1998; 98US-0073031.  
 XX (ELIL ) LILLY & CO ELI.  
 XX

PI Shi Y;  
 XX  
 DR WPI; 1999-469338/39.  
 DR N-PSDB; AAX86563.  
 XX  
 PT Novel rat and human pancreatic eukaryotic translation initiation  
 factor 2alpha kinase useful for drug discovery and development  
 XX  
 PS Claim 7; Page 46-50; 77pp; English.  
 XX  
 CC The present sequence represents a pancreatic eukaryotic translation  
 initiation factor-2 alpha kinase (PEK). PEK phosphorylates eukaryotic  
 translation initiation factor-2 alpha. PEK polynucleotides was  
 CC cloned from pancreatic islet DNA libraries. The PEK nucleic acids  
 CC and protein can be used as tools for drug discovery and development.  
 XX  
 SQ Sequence 1108 AA;

Query Match 6.5%; Score 549.5; DB 20; Length 1108;  
 Best Local Similarity 29.3%; Pred. No. 4.7e-36;  
 Matches 150; Conservative 82; Mismatches 159; Indels 121; Gaps 17;  
 QY 584 SRYFIEPEELQLLKGAFGAVIKVONKLDGCVAVKRIPINPASRQFRRIKGEVTLSSL 643  
 DB 579 sryltdfepiqcmrgvgvfvfaknkvdncyalkiripnrelarekvmrevkalakl 638  
 QY 644 HHENIVRYNNAWIERHERPAGPTTP-----PDSGPLAKDDRAARG 694  
 DB 639 ehpgivryfnawle-----tppekweemdeiwlkdestdwlpspsmdapsvki 689  
 QY 685 QPASDRTDGLDSVAAAPPPILSSSVSWSSGERSASA-----RPPATGPGSSDDEDD- 736  
 DB 690 rqmdpfstkegieviapspersrfsvgsicgrtssesqfslpfgtdcgnsdasda 749  
 QY 737 -----DEDEHGGVFSQSLPAS-----DSFSDIIFDNEDENSKS 770  
 DB 750 ahnlqsdcltdcmedgtvdgddeghsfelcpeaseapysrtregtssivfedsgcdnas 809  
 QY 771 QNDEDCNE-KNGCH-----ESEPSTTEAVH----- 796  
 DB 810 skedprmrlnhghyvnkltefkssrsseatslstptpttllsldftrntvdrlqp 869  
 QY 797 -----VLYIQMEYCEKSTLRTDIDGLY---RDTVLRLFRILDLGLAYIHEKGMHRD 848  
 DB 870 sspkvlylqmqicrkenlkdwmrrcsmedrehrrvclhifiqaeavqfllhskgmhrd 929  
 QY 849 LKPVNIFLSDHVKIGDFGLATDHLAFSADSKDDQDTGDLIKSDPS-GHLTGMVGTALY 907  
 DB 930 lkpsniffmddvkvvgdglvt-----amdqdeeqt--vitpmpayathgvgvgtkly 982  
 QY 908 VSPE-VOGSTKSAYNOKVDLFSGLIIFEMSYHPMWTASERIFVLNQLRDTSPKPEDEF 966  
 DB 983 mspekighnn---yshkvdifslglilfelly-pfstqmervertldvr---nlkfpplf 1035  
 QY 967 DDGEHAKOKSVISLWLNHDPKAPRPTATELLKS 998  
 DB 1036 tq-kypqehmmvqdmispspmerpeatdien 1066

RESULT 6  
 AAY30048  
 ID AAY30048 standard; Protein; 1068 AA.  
 XX  
 AC AAY30048;  
 DT 04-OCT-1999 (first entry)  
 DE Pancreatic eukaryotic translation initiation factor-2 alpha kinase.  
 KW Pancreatic eukaryotic translation initiation factor-2 alpha kinase; PEK;  
 KW eukaryotic translation initiation factor-2 alpha; pancreatic islet;  
 KW drug discovery; drug development.

```
XX OS Homo sapiens.
XX XX WO9938994-A1.
XX XX 05-AUG-1999.
XX XX 12-JAN-1999; 99WO-US00623.
XX XX 25-NOV-1998; 98US-0109992.
XX XX 29-JAN-1998; 98US-0073031.
XX XX (ELIL ) LILLY & CO ELI.
XX XX Shi Y;
XX XX WPI; 1999-469338/39.
XX XX N-PSDB; AAX86565.
XX XX Novel rat and human pancreatic eukaryotic translation initiation
XX XX factor 2alpha kinase useful for drug discovery and development
XX XX Claim 7; Page 68-72; 77pp; English.
XX XX The present sequence is a partial pancreatic eukaryotic translation
XX XX initiation factor-2 alpha kinase (PEK). PEK phosphorylates eukaryotic
XX XX translation initiation factor-2 alpha. PEK polynucleotides was
XX XX cloned from pancreatic islet DNA libraries. The PEK nucleic acids
XX XX and protein can be used as tools for drug discovery and development.
XX XX Sequence 1068 AA;

Query Match 6.0%; Score 511.5; DB 20; Length 1068;
Best Local Similarity 29.9%; Pred. No. 6.2e-33;
Matches 153; Conservative 82; Mismatches 156; Indels 121; Gaps 22;

QY 584 SRYFIEFEELQLLGKGFAGVAVIKVQNKLDGCCYAVKRIPINPASQFRRIKGEVTLSSL 643
DB 539 sryltdfepiclgrrggfvvfeaknkvdcdnyakiripnrelarekvmevkalakl 598
QY 644 HHENIVRYNNAWIE-----RHERPAGP-GTPPPDSGPLAKDDRAARGQPA 687
DB 599 ehpgivryfnawleappekqekwqekmdeiwkdestdwlsspsmdapsvk---irmdpf 655
QY 688 SDTDLDSVEAAAPPILSSSVSWSTSGERSAS--ARFPATGPGSSDDED----- 735
DB 656 stk---ehlieiapspqrsrfsvgsicdqtssesqfslfsgmdhisesvdaayn 712
QY 736 -----DDED-----EHGGVFSQSFLPASD-----SESDIIFDN---EDENSKS 770
DB 713 lqdscltdcdvedgmdndeghsfelcpseaspyvrstssivfedsgcdnasske 772
QY 771 QNOEDCNEKNGC-----HSEPSV-----TTEAVH----- 796
DB 773 eptknlrhgnhcnkltafkptssksseatispprttllsldtntteklqpsp 832
QY 797 --YLYIQMEYCEKSTLRD-----TIDQGLYRDTVRLWRLFREILDGLAYIHEKGMHHRD 848
DB 833 kvlylqmqclcrkenlkdwmggrctee---rersvclhifqlaeavefihskglmhrrd 889
QY 849 LKPVNIFLDSDDHVKIGDFGLATHLAFSADSKDDQTDGLIKSDPS-GHUTGMVGTALY 907
DB 890 lkpsniffmtddvkvqvgflvt-----amdqdeeqt---vltmpayarhtgvgvgtkly 942
QY 908 VQSPF-VQGSTKAYNQVDLFLSLGILFIIFEMSYHPMWTASERIFVLNQLRDTSPKFPEDF 966
DB 943 mspeqlgh---nsyshkvdifslgilfelly-pfstqmervirtldvr---nkfpplf 995
QY 967 DQGEHAKQSVISWLLNHDPAKRPATATELLKS 998
DB 996 tq-kypcyvmvqmdlsspsmerpeainien 1026
```

```
RESULT 7
AAY30047
ID AAY30047 standard; Protein; 1115 AA.
XX AC AAY30047;
XX DT 04-OCT-1999 (first entry)
XX XX Pancreatic eukaryotic translation initiation factor-2 alpha kinase.
XX DE Pancreatic eukaryotic translation initiation factor-2 alpha kinase; PEK;
XX KW eukaryotic translation initiation factor-2 alpha; pancreatic islet;
XX KW drug discovery; drug development.
XX XX Homo sapiens.
XX XX WO9938994-A1.
XX XX 05-AUG-1999.
XX XX 12-JAN-1999; 99WO-US00623.
XX XX 25-NOV-1998; 98US-0109992.
XX XX 29-JAN-1998; 98US-0073031.
XX XX (ELIL ) LILLY & CO ELI.
XX XX Shi Y;
XX XX WPI; 1999-469338/39.
XX XX N-PSDB; AAX86564.
XX XX Novel rat and human pancreatic eukaryotic translation initiation
XX XX factor 2alpha kinase useful for drug discovery and development
XX XX Claim 7; Page 57-62; 77pp; English.
XX XX The present sequence represents a pancreatic eukaryotic translation
XX XX initiation factor-2 alpha kinase (PEK). PEK phosphorylates eukaryotic
XX XX translation initiation factor-2 alpha. PEK polynucleotides was
XX XX cloned from pancreatic islet DNA libraries. The PEK nucleic acids
XX XX and protein can be used as tools for drug discovery and development.
XX XX Sequence 1115 AA;

Query Match 6.0%; Score 511.5; DB 20; Length 1115;
Best Local Similarity 29.9%; Pred. No. 6.7e-33;
Matches 153; Conservative 82; Mismatches 156; Indels 121; Gaps 22;

QY 584 SRYFIEFEELQLLGKGFAGVAVIKVQNKLDGCCYAVKRIPINPASQFRRIKGEVTLSSL 643
DB 586 sryltdfepiclgrrggfvvfeaknkvdcdnyakiripnrelarekvmevkalakl 645
QY 644 HHENIVRYNNAWIE-----RHERPAGP-GTPPPDSGPLAKDDRAARGQPA 687
DB 646 ehpgivryfnawleappekqekwqekmdeiwkdestdwlsspsmdapsvk---irmdpf 702
QY 688 SDTDLDSVEAAAPPILSSSVSWSTSGERSAS--ARFPATGPGSSDDED----- 735
DB 703 stk---ehlieiapspqrsrfsvgsicdqtssesqfslfsgmdhisesvdaayn 759
QY 736 -----DDED-----EHGGVFSQSFLPASD-----SESDIIFDN---EDENSKS 770
DB 760 lqdscltdcdvedgmdndeghsfelcpseaspyvrstssivfedsgcdnasske 819
QY 771 QNOEDCNEKNGC-----HSEPSV-----TTEAVH----- 796
DB 820 eptknlrhgnhcnkltafkptssksseatispprttllsldtntteklqpsp 879
QY 797 --YLYIQMEYCEKSTLRD-----TIDQGLYRDTVRLWRLFREILDGLAYIHEKGMHHRD 848
```

Db 880 kvlyiqmqlcrkenlkdmnggrctiee--rersvclhiflqiaaveflhskglmhrd 936  
 QY 849 LKPVNIFLSDDHVKIGDFGLATDLAFSADSKQDDQTGLIKSDPS-GHLTGMVGITALY 907  
 Db 937 lkpsnifftmdvkvvgfivt-----amdqdeeeqt--vltmpayarhtgvgtkly 989  
 QY 908 VSPE-VQGSTKAYNQKVDLSLGIIFFEMSYHPMTASERIFVLNQLRDTSPKFPEDF 966  
 Db 990 mspeqihg---nsyshkvdifslglilfelly-pfstqmervritdvr---nlkfpelf 1042  
 QY 967 DGEHAKOKSVISWLLNHDPAKRPTATTELLKS 998  
 Db 1043 tq-kypceyvmvqdmispmerpeainien 1073  
 Db 1043 tq-kypceyvmvqdmispmerpeainien 1073  
 RESULT 8  
 AAR44008  
 ID AAR44008 standard; Protein; 626 AA.  
 XX  
 AC AAR44008;  
 XX  
 DT 12-MAY-1994 (first entry)  
 XX  
 DE Rabbit eIF-2 alpha kinase.  
 XX  
 KW eukaryotic initiation factor 2 alpha kinase; HRI;  
 KW haem-regulated initiator; translation; protein synthesis;  
 KW rabbit reticulocyte lysate.  
 XX  
 OS Oryctolagus cuniculus.  
 XX  
 FH Key Location/Qualifiers  
 FT Peptide 166..178  
 FT Peptide /label= P-56  
 FT Peptide 454..467  
 FT Peptide /label= P-52  
 FT Peptide 506..525  
 FT Peptide /label= P-74  
 XX  
 PN JP05260981-A.  
 XX  
 PD 12-OCT-1993.  
 XX  
 PF 02-MAR-1992; 92JP-0081664.  
 XX  
 PR 02-MAR-1992; 92JP-0081664.  
 XX  
 PA (MASI ) MASSACHUSETTS INST TECHNOLOGY.  
 XX  
 DR WPI: 1993-356453/45.  
 DR N-PSDB; AAQ51296.  
 XX  
 PT DNA coding for eucaryotic cell initiation factor 2-alpha kinase -  
 PT used for regulation of cell proliferation and differentiation,  
 PT for treating cancer and psoriasis  
 XX  
 PS Claim 2; Page 2-3; 20pp; Japanese.  
 XX  
 CC The eIF-2alpha kinase can be used to inhibit protein synthesis, to  
 CC induce cell differentiation and to prevent esp.viral infection. The  
 CC kinase is also called the haem-regulated initiator protein (HRI).  
 XX  
 SQ Sequence 626 AA;  
 Query Match 5.6%; Score 473.5; DB 14; Length 626;  
 Best Local Similarity 32.2%; Pred. No. 3.6e-30;  
 Matches 146; Conservative 69; Mismatches 170; Indels 69; Gaps 18;  
 QY 580 QRFGRYFIEFEELQLLKGAFVAVIKVQNKLDGCCYAVKRIPINPASR-QFRRIKGEVT 638  
 Db 160 eaqtsrylnefeelsilkggygryvkrnkldggyaikkilkgatktdcmkvirevk 219

QY 639 LLSRLHENIVRYYNWIER-HERPAGCTP--PPDSGPIA--KDDRAARGQPASDTDGL 693  
 Db 220 vlaglghpnivgyhtawiehvhvqadvpiqlpslevlsdqedrdgvykndasss 279  
 QY 694 DSVEAAAAAPPILSSSVEMWSTGERSASARFPA-----TGPSSDDEDDDEHGHGVFSQ 747  
 Db 280 silfaefspekeksdecavesqnnklyvttlnlvrdtgefesste---rqengsiver 336  
 QY 748 SFLPASDSESDIIFDNEDENSKQDQEDCNKNGCHESEPSVTTAVHY--LYIOMEYC 805  
 Db 337 qlifghnsdve-----edfstaeesesedlsalr-----htevqyhlmlhmqmlic 382  
 QY 806 EKS-----TLRDTIDQGL--YRDTVRLWRLFREILDGLAYIHEKGMHRLDKPVN 853  
 Db 383 elslwdwiaernrrsrecvdscapyvmvsvatkifgelvegvyfhnmgivhrdtkprn 442  
 QY 854 IFLDS-DDHVKIGDFGLATDLAFSADSKQDDQTGLIKSDPSCHLTGMVGYALYSPE- 911  
 Db 443 iflhpdqgvkigdfgla-----cadliqknaartsrngerapthtsrvgtclyaspeq 496  
 QY 912 VQGSTKAYNQKVDLSLGIIFFEMSYHPMTASERIFVLNQLR-----DPTSPKFPEDF 966  
 Db 497 leg---seydaksdmysvgvilllel-fqpfgtemeraevltgvrigrpdsiskrop--- 549  
 QY 967 DGEHAKOKSVISWLLNHDPAKRPTATTELLKSEL 1000  
 Db 550 -----aqakyvqltrnasqpsalqlqsel 577  
 RESULT 9  
 AAR49849  
 ID AAR49849 standard; Protein; 626 AA.  
 XX  
 AC AAR49849;  
 XX  
 DT 14-OCT-1994 (first entry)  
 XX  
 DE Haem-regulated eukaryotic initiation factor 2 alpha kinase.  
 XX  
 KW Haem-regulated eukaryotic initiation factor 2 alpha kinase;  
 KW differentiation; cell division; protein synthesis; cancer;  
 KW cell proliferation; chronic myelogenous leukaemia; psoriasis;  
 KW infection.  
 XX  
 OS Oryctolagus cuniculus.  
 XX  
 PN WO9405794-A.  
 XX  
 PD 17-MAR-1994.  
 XX  
 PF 27-AUG-1993; 93WO-US08131.  
 XX  
 PR 31-AUG-1992; 92US-0938782.  
 XX  
 PA (MASI ) MASSACHUSETTS INST TECHNOLOGY.  
 XX  
 PI Chen J, London IM;  
 XX  
 DR WPI: 1994-101198/12.  
 DR N-PSDB; AAQ44511.  
 XX  
 PT DNA encoding the haem-regulated eukaryotic initiation factor 2  
 PT alpha kinase - used as an anti-viral and anti-proliferative  
 PT agent, esp. against cancer and psoriasis  
 XX  
 PS Claim 9; Page 32-35; 53pp; English.  
 XX  
 CC The haem-regulated eukaryotic initiation factor 2 alpha kinase (HRI)  
 CC is a potent inhibitor of protein synthesis and may have a role in  
 CC the regulation of cell division. It can be used to inhibit  
 CC infection and as an antiproliferative agent in cancers  
 CC such as chronic myelogenous leukaemia and psoriasis. The cDNA  
 CC encoding HRI can be inserted into cells to manipulate proliferation

CC and differentiation, especially of cells with uncontrolled  
XX proliferation or arrested differentiation.

XX Sequence 626 AA;

Query Match 5.6%; Score 473.5; DB 15; Length 626;  
Best Local Similarity 32.2%; Pred. No. 3.6e-30;  
Matches 146; Conservative 69; Mismatches 170; Indels 69; Gaps 18;

QY 580 QRFSSRYFIEPEELQLKGAFGAVIKVQNKLDGCCVAVKRIPINPSR-QFRRIKGEVT 638  
DB 160 eaqtsrlynefeelsiigkgyggyrvvrnkldggyaikklikatgkdcmkvirek 219  
QY 639 LLSRLHHEINIVRYNAWIER-HERPAGGTP--PPDSGPLA--KDRRAARGQPASDTDGL 693  
DB 220 vlaglqhnivgyhtawlehvhvqadrvpqlpslevlsdqeedrvgvkdassss 279  
QY 694 DSVAAAPPPLSSSVWSTSGERSASARPPA-----TQPGSSDDEDDDEHGGVFSQ 747  
DB 280 silfaefspekssdecavesgunklvyntnlvrvdtgefesste---rqengsilver 336  
QY 748 SFLPASDESILFDNEDESKSQNDCEKNGCHESEPSVYTTAVHY--LYIQMEYC 805  
DB 337 qlifghusdve-----edfssaeesseedlsalr-----htevqyhlmlhgmqlc 382  
QY 806 EKS-----TLRDTIDQGL--YRDTVRLWRLFREILDGLAYIHEKGMIRDLKPVN 853  
DB 383 elslwdwlaernrrsrecvdesacpymvsvatkifqelvegyfihmgivhrdlkprn 442  
QY 854 IFLDS-DDHVKIGDFGLATHLAFSADSKDDQDTGDLIKSDPSGHLTGVMVGTALYVSPE- 911  
DB 443 iflhpgdqgkigdgla-----cadilgknaartsrngerapthtsrvgtclyaspeq 496  
QY 912 VOGSTKAYNOKVDLFSLGIIFFPMSVHPMVTASERIFVLNQLR-----DPTSPKPEDF 966  
DB 497 leg---seydaksdmsyvgvilllei-fqpfgttemeraevltgvrgripdsiskrcp--- 549  
QY 967 DQGEHAKQKSVISWLLNHPAKRPTATPELKLSEL 1000  
DB 550 -----aqakyvqlltrnasqrpalslqlqsel 577

RESULT 10  
AAB65664

ID AAB65664 standard; Protein; 630 AA.

AC AAB65664;

DT 27-MAR-2001 (first entry)

XX Novel protein kinase, SEQ ID NO: 192.

DE Human; mouse; protein kinase; antiarthritic; antisclerotic; osteopathic;  
KW immunosuppressive; cardiant; renal; antiinflammatory; antiasthmatic;  
KW dermatological; antidiabetic; antiinfertility; gene therapy; vaccine;  
KW immune disorder; cardiovascular disease; neurodegenerative disease;  
KW cancer; autoimmune disorder; stroke; inflammatory bowel disease;  
KW inflammatory pelvic disease; multiple sclerosis; psoriasis.

XX Homo sapiens.

OS WO200073469-A2.

PN 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US14842.

XX 28-MAY-1999; 99US-0136503.

XX (SUGE-) SUGEN INC.

XX Plowman GD, Martinez R, Whyte D, Sudersanam S;

XX

DR WPI; 2001-032161/04.

XX N-PSDB; AAF44692.

XX Nucleic acids encoding kinase polypeptides, useful for diagnosing and  
PT treating immune-related diseases and disorders, cardiovascular disease,  
PT neurodegenerative diseases and/or cancers -

XX Claim 10; Fig 1; 310pp; English.

XX The present sequence is a novel protein kinase. The novel protein kinases  
CC and the nucleic acids that encode them may be used in the treatment and  
CC diagnosis of diseases associated with inappropriate kinase expression  
CC such as immune-related diseases and disorders, cardiovascular disease,  
CC neurodegenerative diseases and/or cancers. The nucleic acids and  
CC complementary sequences may also be used as DNA probes in diagnostic  
CC assays. The kinase polypeptides may be used as antigens in the production  
CC of antibodies of kinase expression and activity. Anti-kinase antibodies  
CC and kinase antagonists may also be used to down regulate kinase  
CC expression and activity. Diseases related to kinase expression and  
CC activity include rheumatoid arthritis, atherosclerosis, autoimmune  
CC disorders, complications of organ transplantation, myocardial infarction,  
CC immune disorders, cardiomyopathies, strokes, renal failure,  
CC oxidative-stress related disorders, chronic inflammatory bowel disease,  
CC chronic inflammatory pelvic disease, multiple sclerosis, asthma,  
CC osteoarthritis, psoriasis, rhinitis, autoimmunity, diabetes, cancers and  
CC reproductive disorders.

XX Sequence 630 AA;

Query Match 5.5%; Score 471.5; DB 22; Length 630;  
Best Local Similarity 32.9%; Pred. No. 5.3e-30;  
Matches 161; Conservative 70; Mismatches 185; Indels 73; Gaps 22;

QY 550 QSPESGQDYVETVPSNRLPSAAFFSETQRFSPRYFIEPEELQLKGAFGAVIKVON 609  
DB 129 rsakervrqpcedsrqkirsrevalaqt--srylnefeelvilgkggyrvykvrn 186  
QY 610 KUDGCCYAVKRIPINPSARQF-RRIKGEVTLRLSLHHEINIVRYNAWIERHAPGCTP 668  
DB 187 kldggyaalkkllkgatkctvmkvlrevkvlaglqhnivgyhtawle-hvhviqp--- 242  
QY 669 PPDGFLAKDDRAARGQPA-----SPTDGLDSVEAAAPPILSSSV-E 710  
DB 243 -----radraaelpslevlsdqeedreqvgvkndesssssiifaeptekkrige 294  
QY 711 WTSGERASARPPA--TGPGSSDDEDDDEHGGVFSQSFPLPASDESILFDNEDENS 768  
DB 295 sdtengnknkvktytnlviresgelestlelqenglagls--assliveqqlplrnshle 352  
QY 769 KSONQDEDCNEKNGCHESEPSVYTTAVHY--LYIQMEYCEKSTL-----RDTIDQ 816  
DB 333 ssteeseevnvflgq---teagyhlmhgmqlcelsldwivernkrreyvde 408  
QY 817 GL--YRDTVRLWRLFREILDGLAYIHEKGMIRDLKPVNIFLDS-DDHVKIGDFGLA-TD 872  
DB 409 sacpymvanvatkifqelvegyfihmgivhrdlkprniflhpgdqgkigdglaactd 468  
QY 873 HLAFSADSKDDQDTGDLIKSDPSGHLTGVMVGTALYVSPE-VOGSTKAYNOKVDLFSLGI 931  
DB 469 il-----qkntdwtmrngkrtp-t-h-tsrvtgcliyaspeqleg---seydaksdmsylgv 518  
QY 932 IFFEMSYHPMVTASERIFVLNQLRDPSTPKPEDFDQGEHAKQKSVISWLLNHPAKRPT 991  
DB 519 vllel-fqpfgttemeraevltglr---tgqipeslrk-rcpvqakyiqhltrnssqrps 573  
QY 992 ATELKSEL 1000  
DB 574 aqlqlqsel 582

RESULT 11



AAW36139  
ID AAW36139 standard; Protein; 550 AA.  
XX  
AC AAW36139;  
XX  
DT 30-MAR-1998 (first entry)  
XX  
DE Human PKR protein.  
XX  
KW Human; PKR; double stranded RNA-activated protein kinase; neoplasm;  
KW cell growth; differentiation; tumour suppressor; tumorigenesis.  
XX  
OS Homo sapiens.  
XX  
PN US5670330-A.  
XX  
PD 23-SEP-1997.  
XX  
PF 25-OCT-1993; 93US-0143219.  
XX  
PR 25-OCT-1993; 93US-0143219.  
PR 29-SEP-1992; 92US-0953681.  
PR 22-OCT-1993; 93US-0141244.  
XX  
PA (UYMC-) UNIV MCGILL.  
PA (UNIW ) UNIV WASHINGTON.  
XX  
PI Barber GH, Katze MG, Koromilas AE, Roy S, Sonenberg N;  
XX  
DR WPT; 1997-479453/44.  
DR N-PSDB; AAV01060.  
XX  
PT Screening method for identifying anti-tumour agents - based on an  
PT increase in the activity of a double stranded RNA-activated protein  
PT kinase  
XX  
PS Disclosure; Fig 5; 4lpp; English.  
XX  
FS This is the amino acid sequence of the human PKR protein, a double  
CC stranded RNA-activated protein kinase. The protein can be used in a  
CC screening method for identifying anti-tumour agents by measuring PKR  
CC activity in a system before and after adding a test agent, where an  
CC increase in PKR activity indicates that the agent is an anti-tumour  
CC agent, especially useful for the prevention and/or treatment of  
CC neoplasms. PKR is an interferon-inducible cytoplasmic Ser-Thr specific  
CC protein kinase which can also be activated by double stranded RNA.  
CC PKR is active in cell growth and differentiation by regulating protein  
CC synthesis, and thus has been suggested to function as a tumour  
CC suppressor. The screening system may also include a further protein  
CC which inhibits PKR activity thereby inducing tumorigenesis. An example  
CC of such a protein is the P58 protein, a cellular 58 kD protein purified  
CC from influenza-infected cells (see AAW36140).  
XX  
SQ Sequence 550 AA:

Query Match 4.9%; Score 415.5; DB 18; Length 550;  
Best Local Similarity 25.7%; Pred. No. 1.9e-25;  
Matches 156; Conservative 69; Mismatches 166; Indels 217; Gaps 23;

QY 408 QLLSGLDYLSNSVVKVLSASNVLDVAGTGVKITYDSISKRLADICKEDVFEQTRVRFS 467  
Db 155 qlaaklaylq-----ilseetsvk-sdylssgsfattces-----q 189  
QY 468 DNALPYTKGKGVDWRLGILLLSLQSGQEGEYPTIPSDLPADFQDFLKKVCVLDKKE 527  
Db 190 snslvst-----lasesseg-----dfsadtseily-----sds 220  
QY 528 WSPQQLLKHSFINPQPKMPLVEQSPEDSGQGVETVTPSNRLPSAAPPSETQRFQSRVF 587  
Db 221 lnssslmglnrnqrkak-----rslaprfldp---mketytdvkrf 262  
QY 588 -IEFEELQLLGKGAFAVGVKQNKLDGCCYAVKRIPIPNASRQFRRIKGEVTLRLHHE 646

Db 263 gmdfkelelsgsgf9qvfakhrldgktyvkrvknyn-----ekaerevkalakidhv 317  
QY 647 NIVRYNNAWIERHERPAGPGTPPDPSGFLAKDDRAARQGPASDGTGLDSVEAAAPPPILS 706  
Db 318 nivhyngcw-----dgfd----- 330  
QY 707 SSVEMSTSGERSASARFPATGPGSSDDEDDDEHGGVFSOSFLPASDESSEDIIFDNEDE 766  
Db 331 -----ydpetsdds-----less-----dydpe 348  
QY 767 NSKSONQEDCNEKNGCHESPSVTTEAVHVLVYIQMEYCEKSTLRTDID--OGLYRDTVR 824  
Db 349 nsknsr-----sktkc-----lfqmeecdkgtleqwkrgkrlkvl 389  
QY 825 LWRLEFRLDGLAYTHEKGMHRLDKPVNIFLSDDDHVKIGDFGLATDHLAFSADSKQDD 884  
Db 390 alelfegitkgvdyihskkllhrldkpsniflvdtkvkgdfiglvs----- 437  
QY 885 QTGDLIKSDPSGHLTGMVGTALYVSPVQSGTKSAYNOKVDLFSGLGIFFBMSYHPMVT 944  
Db 438 -----lknd--gkrtrskgtlrymspeqlss--qdygkevdyalglilael-lhvccta 487  
QY 945 SERIFVLNQLRDTSPKPEPDEDDGEHAQKQSVISWLLNHDPAKRPATTELLKSELLPPP 1004  
Db 488 fetskftrldrgi---isdifd---kkektilqkliskkpdrpntseilrtitvwwk 540  
QY 1005 QMESEELH 1012  
Db 541 speknerh 548

RESULT 12  
AAR82663  
ID AAR82663 standard; Protein; 551 AA.  
XX  
AC AAR82663;  
XX  
DT 27-JAN-1996 (first entry)  
XX  
DE Human p68 kinase mRNA (PKR).  
XX  
KW PK68; p68 kinase; mrpK68.  
XX  
OS Homo sapiens.  
XX  
PN WC9522245-A.  
XX  
PD 24-AUG-1995.  
XX  
PF 16-FEB-1995; 95WO-US02058.  
XX  
PR 18-FEB-1994; 94US-0198973.  
XX  
PA (CLEV-) CLEVELAND CLINIC FOUND.  
XX  
PI Sengupta DN, Silverman RH;  
XX  
DR WPI; 1995-302493/39.  
XX  
PT New transgenic plants resistant to viral infection contg. 2-5A-dependent  
PT RNase - useful in developing products useful in gene therapy against  
PT viral disease and cancer.  
XX  
PS Disclosure; Figure 19; 196pp; English.  
XX  
CC PKR (PK68) is a lysine - arginine mutant PKR (mrpK68). The mutant  
CC PKR protein binds to dsRNA but has no kinase activity. A transgenic  
CC plant is claimed which includes the nts in AAT03503 or any part of  
CC this sequence which contains the complete or partial coding  
CC sequence for PKR or the ds RNA binding domain of PKR. The  
CC translation product of the complete coding sequence for human  
CC p68 kinase mRNA (PKR) is given in AAR82663.

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XX          Query Match
SQ          Best Local Similarity 4.9%; Score 414; DB 16; Length 551;
          Matches 156; Conservative 69; Mismatches 167; Indels 216; Gaps 23;

QY 408 QLLSGLDYLHNSNVVHKVLSASNVLDAGTGVKITYDISKRLADICKEDVFQTRVRS 467
Db 155 qlaaklaylq-----ilseetvsk-sdylssggsfattces-----q 189

QY 468 DNALPYKTGKGDVWRLGLLLSLQSGQCEGYPTIPSDLPADQDFLKKVCVLDKDER 527
Db 190 snslvtst-----lasessseg-----dfsadtsei-----nnsds 221

QY 528 WSPQQLLKHSPINQPKMPLVQSPEDSGGDYVETVIPSNNRLPSAAPPSTQRFQSYF 587
Db 222 lnssllmnglrnnqrkak-----rslaprdlpld---mketkytdvkrf 263

QY 588 -IEFEELQLLGKGFAGVAVIKVQNKLDGCCYAVKRIPIPNASQFRRIKGEVTLRLHHE 646
Db 264 gmdfkeleligsggqgfvkakhridgktyvikrvkynn-----ekaerevkalakldhv 318

QY 647 NIVRYNNAWIERHERPAGTPTPPDPSGLAKDDRAARGQPASDTDGLDSVEAAPPPLS 706
Db 319 nivhyngcw-----dgfd----- 331

QY 707 SSVNSTSGERSASARFPATGPGSSDDEDEHGGVFSQSFLPASDSSEDIIFDNEDE 766
Db 332 -----ydpetsdds-----less-----dydpe 349

QY 767 NSKQONDEDCNEKNGCHESEPSVTTEAVHYLYIQMEVCEKSTLRDID--QGLYRDTVR 824
Db 350 nsknsr-----sktke-----lfigmefcdkgtleqwkrrgekldkvl 390

QY 825 LNRLEFRLDGLAYTHEKGMTHRLKPNVIFLSDSDHVKIGDGLAFDHLAFSADSKQDD 884
Db 391 alelfeqitkgvdyihskkllhridkpsniflvtckqkgdglvts----- 438

QY 885 QTGDLLKSPSGHLTCMVGTALYVSPVQGSTKSAYNQKVDLSLGIIFEMSYHPWMTA 944
Db 439 -----lknd--gktrskgtlrymspeqiss--qdygkevdyalglilael-lhvcdda 488

          Query Match
          Best Local Similarity 4.9%; Score 413; DB 18; Length 551;
          Matches 156; Conservative 69; Mismatches 167; Indels 216; Gaps 23;

QY 408 QLLSGLDYLHNSNVVHKVLSASNVLDAGTGVKITYDISKRLADICKEDVFQTRVRS 467
Db 155 qlaaklaylq-----ilseetvsk-sdylssggsfattces-----q 189

QY 468 DNALPYKTGKGDVWRLGLLLSLQSGQCEGYPTIPSDLPADQDFLKKVCVLDKDER 527
Db 190 snslvtst-----lasessseg-----dfsadtsei-----nnsds 221

QY 528 WSPQQLLKHSPINQPKMPLVQSPEDSGGDYVETVIPSNNRLPSAAPPSTQRFQSYF 587
Db 222 lnssllmnglrnnqrkak-----rslaprdlpld---mketkytdvkrf 263

QY 588 -IEFEELQLLGKGFAGVAVIKVQNKLDGCCYAVKRIPIPNASQFRRIKGEVTLRLHHE 646
Db 264 gmdfkeleligsggqgfvkakhridgktyvikrvkynn-----ekaerevkalakldhv 318

QY 647 NIVRYNNAWIERHERPAGTPTPPDPSGLAKDDRAARGQPASDTDGLDSVEAAPPPLS 706
Db 319 nivhyngcw-----dgfd----- 331

QY 707 SSVNSTSGERSASARFPATGPGSSDDEDEHGGVFSQSFLPASDSSEDIIFDNEDE 766
Db 332 -----ydpetsdds-----less-----dydpe 349

QY 767 NSKQONDEDCNEKNGCHESEPSVTTEAVHYLYIQMEVCEKSTLRDID--QGLYRDTVR 824
Db 350 nsknsr-----sktke-----lfigmefcdkgtleqwkrrgekldkvl 390

QY 825 LNRLEFRLDGLAYTHEKGMTHRLKPNVIFLSDSDHVKIGDGLAFDHLAFSADSKQDD 884
Db 391 alelfeqitkgvdyihskkllhridkpsniflvtckqkgdglvts----- 438

QY 885 QTGDLLKSPSGHLTCMVGTALYVSPVQGSTKSAYNQKVDLSLGIIFEMSYHPWMTA 944
Db 439 -----lknd--gktrskgtlrymspeqiss--qdygkevdyalglilael-lhvcdda 488

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PD          19-DEC-1996.
XX
PF          07-JUN-1996; 96WO-US09895.
XX
PR          07-JUN-1995; 95US-0487797.
XX
PA          (CLEV-) CLEVELAND CLINIC FOUND.
XX
PI          Mitra A, Silverman RH;
XX
DR          WPI; 1997-051617/05.
DR          N-PSDB; AAT59650.
XX
PT          Transgenic plants co-expressing 2-5A-dependent RNase and 2-5A
PT          synthetase - have increased resistance to viral infection esp. to
PT          tobacco mosaic virus, tobacco etch virus or alfalfa mosaic virus
PS          Disclosure; Page 146-148; 189pp; English.
XX
CC          Human dsRNA-dependent protein kinase (PKR) (AAW12705) is an
CC          antiviral protein that is believed to phosphorylate the alpha
CC          subunit of translation factor eIF2-alpha, which indirectly inhibits
CC          protein synthesis initiation. Its amino acid sequence was deduced
CC          from a PKR cDNA clone (AAT59650). Novel transgenic plants, such as
CC          transgenic tobacco, express (together or alone) the PKR, human 2-5A
CC          synthetase (see also AAW12701) and human or mouse 2-5A-dependent
CC          RNase (see also AAW12702-03). When the plants are exposed to tobacco
CC          mosaic virus, tobacco etch virus and alfalfa mosaic virus, necrotic
CC          local lesions occur instead of typical systemic infections.
XX
SQ          Sequence 551 AA;

          Query Match
          Best Local Similarity 4.9%; Score 413; DB 18; Length 551;
          Matches 156; Conservative 69; Mismatches 167; Indels 216; Gaps 23;

QY 408 QLLSGLDYLHNSNVVHKVLSASNVLDAGTGVKITYDISKRLADICKEDVFQTRVRS 467
Db 155 qlaaklaylq-----ilseetvsk-sdylssggsfattces-----q 189

QY 468 DNALPYKTGKGDVWRLGLLLSLQSGQCEGYPTIPSDLPADQDFLKKVCVLDKDER 527
Db 190 snslvtst-----lasessseg-----dfsadtsei-----nnsds 221

QY 528 WSPQQLLKHSPINQPKMPLVQSPEDSGGDYVETVIPSNNRLPSAAPPSTQRFQSYF 587
Db 222 lnssllmnglrnnqrkak-----rslaprdlpld---mketkytdvkrf 263

QY 588 -IEFEELQLLGKGFAGVAVIKVQNKLDGCCYAVKRIPIPNASQFRRIKGEVTLRLHHE 646
Db 264 gmdfkeleligsggqgfvkakhridgktyvikrvkynn-----ekaerevkalakldhv 318

QY 647 NIVRYNNAWIERHERPAGTPTPPDPSGLAKDDRAARGQPASDTDGLDSVEAAPPPLS 706
Db 319 nivhyngcw-----dgfd----- 331

QY 707 SSVNSTSGERSASARFPATGPGSSDDEDEHGGVFSQSFLPASDSSEDIIFDNEDE 766
Db 332 -----ydpetsdds-----less-----dydpe 349

QY 767 NSKQONDEDCNEKNGCHESEPSVTTEAVHYLYIQMEVCEKSTLRDID--QGLYRDTVR 824
Db 350 nsknsr-----sktke-----lfigmefcdkgtleqwkrrgekldkvl 390

QY 825 LNRLEFRLDGLAYTHEKGMTHRLKPNVIFLSDSDHVKIGDGLAFDHLAFSADSKQDD 884
Db 391 alelfeqitkgvdyihskkllhridkpsniflvtckqkgdglvts----- 438

QY 885 QTGDLLKSPSGHLTCMVGTALYVSPVQGSTKSAYNQKVDLSLGIIFEMSYHPWMTA 944
Db 439 -----lknd--gktrskgtlrymspeqiss--qdygkevdyalglilael-lhvcdda 488

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QY 945 SERIFVLNLRDPTSPKPPEDDGEHAKOKSVISWLLNHDPKAKRPTATTELLKSELPPPP 1004  
Db 489 fetskftrdrgi---isdifd---kkekltlqllskkpedrptseilrtltwkk 541  
QY 1005 QMESELH 1012  
Db 542 speknerh 549  
RESULT 14  
AAW25223  
ID AAW25223 standard; Protein; 509 AA.  
XX AAW25223;  
AC AAW25223;  
DT 05-FEB-1998 (first entry)  
XX Human histidyl-tRNA synthetase.  
DE  
XX tRNA; transfer RNA; UTR: untranslated region; primer; probe;  
KW amplification; hybridisation; detection; diagnosis; immunoassay;  
KW autoantibody; autoimmune disease; myositis; polymyositis;  
KW dermatomyositis; recombinant.  
XX Homo sapiens.  
XX  
PH Key Location/Qualifiers  
FT Region 67..103  
FT /note= "Motif 1"  
FT Region 107..144  
FT /note= "signature region 1"  
FT Region 145..180  
FT /note= "Motif 2"  
FT Misc-difference 196  
FT /note= "given in the specification as "\*\*,  
FT represents the site of a conserved  
FT substitution"  
FT Region 324..370  
FT /note= "signature region 2"  
FT Region 378..405  
FT /note= "Motif 3"  
XX  
XX US5663066-A.  
XX  
XX 02-SEP-1997.  
XX  
XX 22-APR-1993; 93US-0052404.  
XX  
XX 22-APR-1993; 93US-0052404.  
XX 07-JUN-1995; 95US-0479156.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX (USSH ) US NAT INST OF HEALTH.  
XX  
XX Leff R, Nichols R, Plotz P, Raben N;  
XX  
XX WPI; 1997-447931/41.  
XX  
XX Recombinant histidyl tRNA synthetase produced in insect cells -  
XX useful in immunoassays for diagnosis of autoimmune diseases  
XX  
XX Disclosure; Fig 2A-B; 28pp; English.  
XX  
XX AAW25223 represents human histidyl tRNA synthetase (HRS). This  
XX sequence was produced from a human HRS gene suitable for  
XX expressing HRS in insect host cells, particularly Sf9 cells. The  
XX protein, or peptide fragments produced can be used in immunoassays  
XX for detecting autoantibodies associated with autoimmune diseases,  
XX especially myositis, polymyositis or dermatomyositis. The recombinant  
XX protein is more sensitive to autoantibodies than HRS purified from  
XX calves' liver or HeLa cells and has better storage stability, C.  
XX especially being stable for more than 24 hr at -80 to 25 deg. C.

SQ Sequence 509 AA;  
Query Match 4.7%; Score 399; DB 18; Length 509;  
Best Local Similarity 24.7%; Pred. No. 3.Be-24;  
Matches 129; Conservative 110; Mismatches 225; Indels 58; Gaps 16;  
QY 1007 ESESELHVLHHTLTNNVDGKAYRTMAQIFSQRIISPFI-----DVTYSDILK----- 1053  
Db 3 eraaleelvklgervrglkqkasaeeleeevakllkkaqlgpdskqkfvltkpgkt 62  
QY 1054 GNFSTRTAKMOOVHCETITRIFKRHCAGVQLCTPLLLPNRQIYEHNEAALPM-----DHSG 1109  
Db 63 rdyprqmarvrekfvdiircfkrhgaevidtpvfelketlmgygedskliylldkdgqg 122  
QY 1110 MLVMLPFDLRIPFARYVARNNLLNKRKYCIERVFRPRK--LDREHPKLELSCAFDIVTST 1167  
Db 123 ellslrydltpfarylamnkltknryhiakvyrdrnpamtrgrgyrfygcdfdi-agn 181  
QY 1168 TNSFLTAELIYIYIEIIQEFPALEERNYSIYLNHTMLLKAILLHCGIPEDKLSQV--YI 1225  
Db 182 fdpmipdaecikimxeils---slqigdfivkvndrrildgmfaicgvdsdkfrticssv 238  
QY 1226 ILVDAYTEKILTRREVEAKFCNLSSNSLCRLYKFIEOKGDLQDLMPNTINSLIKQ----- 1280  
Db 239 dkldkvsweevknemvge---kgapevadrigdyvqghgv-----slveqlldqp 287  
QY 1281 KTGIAQLVKYGLKDLLEVVGLLKKIGIKLOVLINLGLVYKVOOHNGIIFOFVAFIKRRQR 1340  
Db 288 klsgnkqaleglgdlkllfeyltlfgldkifdislargoidyrgvlyeavllqtapaqa 347  
QY 1341 AVPEI-----LAAGGRYDLLIPQFRGPQALGPVPTAIGVSIADIKISAAVLN-----MEESV 1392  
Db 348 geepigvgsvaagrgydlvgmf---dpkgrkvpcvglsigverifsiveqrlealeeki 404  
QY 1393 TISSCDLLVSVGOMSMRAINLTQKLWTAGITAEIMYDWSQSQSELOEYCRHHEITVVA 1452  
Db 405 rttetgvlvasagkllleerklvselwdagikaellyknpkllnqlgycceagiplva 464  
QY 1453 LVSDKE--GSHVKVKSPKEREKOTKRVLETELVDHVLQKLRT 1492  
Db 465 liqeqlkdgvikrsrvtsreevdvr--redlveei--krrt 502  
RESULT 15  
AAW25223  
ID AAW25223 standard; Protein; 495 AA.  
XX  
XX AAW25223;  
DT 10-AUG-2000 (first entry)  
XX  
XX Corn histidyl-tRNA synthetase.  
XX  
XX Corn histidyl-tRNA synthetase; aminoacyl-tRNA synthetase;  
XX AARS; herbicide; plant toxin; protein synthesis inhibition; enzyme.  
XX  
XX Zea mays.  
XX  
XX WO2000028057-A2.  
XX  
XX 18-MAY-2000.  
XX  
XX 09-NOV-1999; 99WO-US26478.  
XX  
XX 10-NOV-1998; 98US-0107789.  
XX (DUPO ) DU PONT DE NEMOURS & CO E I.  
XX (PION-) PIONEER HI-BRED INT INC.  
XX  
XX Famodu OO, Simmons C;  
XX WPI; 2000-387421/33.  
XX

Search completed: October 22, 2001, 01:17:35  
Job time: 7236 sec